

What is claimed is:

1. A liquid fuel injector, comprising:
a nozzle;
5 a purge gas inlet;
a liquid fuel inlet; and
a schrader valve, movable between an open position and a closed position,
wherein the liquid fuel inlet is in communication with the nozzle when the schrader valve
is in the open position and the purge gas inlet is not in communication with the nozzle
10 when the schrader valve is in the open position, and wherein the liquid fuel inlet is not in
communication with the nozzle when the schrader valve is in the closed position and the
purge gas inlet is in communication with the nozzle when the schrader valve is in the
closed position.

2. The liquid fuel injector of Claim 1, wherein the schrader valve comprises a
15 valve stem that is depressed by virtue of the stem's contact with the nozzle when the
schrader valve is in the open position.

3. The liquid fuel injector of Claim 1, further comprising a heat shield protecting
the nozzle.

4. The liquid fuel injector of Claim 3, further comprising a cooling water jacket,
20 wherein the heat shield conducts heat into the cooling water jacket.

5. The liquid fuel injector of Claim 1, further comprising a spring mechanism,
wherein the spring mechanism is positioned to move the schrader valve from the open
position to the closed position.

6. A method for alternating between a liquid fuel flow and a purge gas flow in a
25 fuel injector, comprising the steps of:

moving a schrader valve between an open position and a closed position,
wherein the purge gas flow is blocked when the schrader valve is in the open position and
the liquid fuel flow is blocked when the schrader valve is in the closed position.

7. The method of Claim 6, wherein moving the schrader valve from the closed

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position to the open position comprises the step of depressing the schrader valve against a nozzle of the fuel injector.

8. The method of Claim 6, wherein the moving of the schrader valve from the open position to the closed position is facilitated by a spring mechanism.

5 9. The method of Claim 6, wherein the moving of the schrader valve from the closed position to the open position is facilitated by pressure in the liquid fuel flow.

10. The method of Claim 6, wherein the step of moving the schrader valve utilizes an air cylinder.